

## RETRACTABLE TELESCOPING COURT STANDARD

### FIELD OF THE INVENTION

This invention relates to net support standards used in gymnasiums. More particularly this invention relates to net a support standard which telescopes down to a fraction of its extended height and then retracts below floor grade for storage.

### BACKGROUND OF THE INVENTION

Most gymnasiums are used for many and all indoor sporting activities. A school gymnasium is typically continuously scheduled for different activities each hour. If volleyball, tennis, or badminton are played it is first necessary to access a storage room and carry the net standards from the storage room to a central portion of the gymnasium where they will be used. Before the conclusion of the scheduled time the standards must be removed and returned to the storage room so the gymnasium will be cleared and available for the next scheduled players. These standards are heavy. Generally, arriving early to access them in storage and lug them to position and, staying late to lug them back to storage, is one of the least preferred aspects of coaching.

One problem with court standards is providing accessible storage for them. A partial solution to this problem is to provide height adjustable standards which may adjust to the varying heights required for volleyball, tennis, or badminton. One problem with using a height adjustable standard is that the multipurpose standard is substantially heavier. What is needed is a standard which is adjustable for height and which can be conveniently stored beneath the floor on the location where it is used.

## OBJECTS OF THE INVENTION

It is an object of this invention to disclose a court standard which can be erected or stored in a fraction of the time required by a conventionally used court standard. It is an object of this invention to disclose a standard which is stored on location beneath the floor and which accordingly does not need to be carried either to or away from position, and which utilizes none of the limited storage space within the gymnasium. It is yet a further object of this invention to disclose a convenient and quick method of erecting and storing a court standard.

One aspect of this invention provides for a court standard for positioning a net above a gymnasium floor comprising: an embedded upright floor tube having a top end portion which is nominally in alignment with the gymnasium floor; a contained tube closely and slidably positioned within the floor tube; and, a releasable lock means to maintain the

contained tube at a selected height above the floor. Most preferably there are a plurality of contained tubes, and each contained tube closely and slidably positioned within a tube therebelow.

In a preferred aspect of this apparatus a top portion of the floor tube and each contained tube has an annular inner stop portion and wherein a lower portion of each contained tube has an annular outer guide portion having a thickness comparable to the inner stop member. The outer guide portion coming into contact with a respective stop member when the contained tube is fully upwardly extended.

Another aspect of this invention provides for a method of erecting a court standard and supported net above a gymnasium floor comprises: providing a court standard as described above; elevating the contained tube to a desired height; releasably locking the contained tube at the selected height above the floor; and, attaching the net to the court standard. The task of carrying the court standard from storage is eliminated and setup time is substantially reduced.

Various other objects, advantages and features of this invention will become apparent to those skilled in the art from the following description in conjunction with the accompanying drawings.

## FIGURES OF THE INVENTION

Figure 1 is a perspective view of a court standard supporting one end portion of a net.

Figure 2 is a plan view of a floor plate having a hinged lid.

Figure 3 is an enlarged cross sectional view showing how two contained tubes and the upright floor tube interlock.

Figure 4 is a perspective view of a rocker arm which utilizes a pin in an elliptical hole so that load is partially carried by the rocker arm rather than entirely by the pin.

Figure 5 is a partial cross sectional view showing a seal within one of the contained tubes shown in figure 1.

The following is a discussion and description of the preferred specific embodiments of this invention, such being made with reference to the drawings, wherein the same reference numerals are used to indicate the same or similar parts and/or structure. It should be noted that such discussion and description is not meant to unduly limit the scope of the invention.

## DESCRIPTION OF THE INVENTION

Turning now to the drawings and more particularly to figure 1 we have a perspective view of a court standard 20 supporting one end portion of a net 18. Most generally, the court standard 20 for positioning a net 18 above a gymnasium floor 16 comprises: an embedded upright floor tube 22 having a top end portion which is nominally in alignment with the gymnasium floor 16; a contained tube 24 closely and slidably positioned within the floor tube 22; and, a releasable lock means 26 to maintain the contained tube 24 at a selected height above the floor 16. Most preferably there are a plurality of contained tubes 24, each contained tube 24 closely and slidably positioned within a tube 24 or 22 therebelow.

Most preferably the court standard 20 further comprises a shock absorbing pad 30 positioned within a bottom portion of the floor tube 22 to cushion the contained tube 24 upon retraction. Most preferably the pad 30 is made of rubber. Most preferably the releasable lock means 26, is a lockable split collar 28. Figure 2 is an enlarged view of a preferred embodiment of the floor cover 32. The plate 34 covering a central opening is movable but attached most preferably with a hinge 36.

Figure 3 is an enlarged cross sectional view showing how two contained tubes 24 and the upright floor tube 22 interlock. A top portion of the floor tube 22 and each contained tube 24 has an annular inner stop portion 40 and wherein a lower portion of each

contained tube has an annular outer guide portion 42 having a thickness comparable to the inner stop member 40. The outer guide portion 42 comes into contact with a respective stop member 40 when the contained tube 24 is fully upwardly extended. Referring back to figure 1 the court standard 20 most preferably has a top and inner most cylindrical member 44 having a lower end portion having an annular outer guide portion 42 and an upper portion adapted for reception of the net 18.

When a winch 46 is releasably attached to a contained tube 24 (see figure 1) and when the top and inner most cylindrical member 44 further comprises a top pulley 48, then a net cable 50 may be drawn over the pulley 48 and tightened with the winch 46.

Figure 4 is a perspective view of a rocker latch 28 which utilizes a pin 54 in an elliptical hole 56 so that load is partially carried by the rocker latch 28 rather than entirely by the pin 56. The releasable lock means 26 on the contained tubes 24 comprises a biased 27 rocker latch 28 configured so that when the contained tube is fully elevated the latch will engage. In the most preferred embodiment of the invention there are two opposite rocker latches 28 so that the latches 28 may be squeezed together for release and wherein each rocker latch 28 pivots on a pin 54 in an upwardly elongate hole 29 so that the load carried by the contained tube 24 is partially carried by the rocker latch 28 rather than entirely by the pin 54.

Figure 5 is a partial cross sectional view showing a seal 60 within a top portion of one of the contained tube 24 shown in figure 1. The contained tube 24 further comprises a peripheral seal 60 to trap air within the inner members 24 to result in an air cushioned retraction of the court standard 24.

A general method of erecting a court standard 20 and supported net 18 above a gymnasium floor 16 comprises: providing a court standard 20 having i) an embedded upright floor tube 22 having a top end portion which is nominally in alignment with the gymnasium floor 16, ii) a contained tube 24 closely and slidably positioned within the floor tube 22; and, iii) releasable lock means 26 to maintain the contained tube 24 at a selected height above the floor 16; elevating the contained tube 24 to a desired height; releasably locking the contained tube 24 at the selected height above the floor; and, attaching the net 18 to the court standard 20. This method avoids the task of carrying the court standard 20 from storage. This general method may be further described and narrowed by including the court standard 20 apparatus specifications described above.

In the most preferred embodiment of the invention there are five interlocking contained tubes 24, as well as the inner and top most cylinder 44. Each of the contained tubes 24 are 2 feet in length and are made from aluminum which is anodized. Padded standard guards (not shown) are provided in various school colours. To install the court standard 20 a 6" diameter hole is drilled through and beneath the concrete floor 16 to a total depth of 28 1/2". The floor tube 24 which has an outside diameter of 4 1/2" is then placed

and concreted within the drilled 6" diameter hole. To retrofit an existing removable standard which is stored off location it is as easy as enlarging the existing hole to the above specified size, and then concreting the floor tube 24 within that enlarged hole.

While the invention has been described with preferred specific embodiments thereof, it will be understood that this description is intended to illustrate and not to limit the scope of the invention, which is defined by the following claims.